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ABSTRACT

A study examined the relationships between retelling--an indicator of reading comprehension obtained through a student's oral recall of a story--and three other indicators of reading comprehension representing various viewpoints in comprehension measurement: miscues, a post oral-reading cloze test, and a passage dependent multiple choice test. Forty-eight fifth grade students of diverse abilities read orally a complete basal reader story. A comprehension process (miscue) score was derived for each student, and the subjects were given the remaining comprehension tasks in counterbalanced order. Six research questions using multiple regression techniques were used to probe the relationships between these indicators and the students' subscores in the retelling format for stories as specified in the miscue analysis procedures. Additional analysis established a corroborative framework between the various indicators using correlations to establish concurrent and predictive validity. Factor analysis defined measurement levels in the data that were theoretically interpretable from a levels-of-processing perspective. The results suggested a degree of construct validity for the indicators used and yielded support for miscue theory and levels-of-processing theory in reading comprehension. (Appendixes contain tables of data and a copy of the comprehension questions used in the study). (Author/FL)

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THE RELATIONSHIPS BETWEEN STUDENT RETELLINGS AND SELECTED COMPREHENSION MEASURES

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SUMMARY

This study examines the relationships between retellings, an indicator of reading comprehension obtained through a student's oral recall of a story, and three other indicators of reading comprehension representing various viewpoints in comprehension measurement: miscues, a post oral-reading cloze test, and a passage-dependent multiple-choice questions test. Forty-eight grade five students of diverse abilities orally read a complete basal reader story. A comprehension process (miscue) score is derived and the subjects are given the remaining comprehension tasks in counterbalanced order. Six research questions utilize multiple regression techniques to probe the relationships between these indicators and the subscores in the retelling format for stories as specified in the miscue analysis procedures. Additional analysis establishes a corroborative framework between the various indicators using correlation to establish concurrent and predictive validity. A confirmatory factor analysis defines three measurement levels in the data which are theoretically interpretable from a levels-of-processing perspective. The results of the study suggest a degree of construct validity for the indicators used and yield support for miscue theory and levels-of-processing theory in reading comprehension.

Statement of the Problem

A recent contribution to the field of indicators used in assessing reading comprehension has been the development of the miscue analysis procedures. These procedures have two steps: the evaluation of an oral reading, and the evaluation of a subsequent retelling. The first step involves the analysis of the reader's miscues, or deviations from the expected oral response to the text. This analysis is performed by assessing each miscue, using psycholinguistically based questions to reveal the qualitative characteristics of the reading process. This first analysis yields an in-process measure of the reading. The second step involves the analysis of the reader's retelling of the text. The retelling is the verbal recall of the reading obtained by asking the reader to report all of the passage that can be remembered, followed by nondirective probing by the evaluator to elicit full recall from the reader. The analysis of the retelling is performed by comparing the recall to an outline of the reading material. This second analysis yields a measure of the product of the reading. Both the process and product measures comprise the full miscue analysis evaluation.

The present retelling scoring system in the miscue analysis procedures for story readings is based on classical literary analysis and assigns rational but numerically arbitrary point weightings to subcategories of reported information. These subcategories include character analysis (recall and development), events, plot, and theme. These arbitrary point weightings yield a scoring system that has a classical and rational foundation, but not an empirical one. Moreover, the relationship between the process and product phases of the miscue analysis procedures warrants further description and clarification than presently exists. Also warranted is increased knowledge regarding the relationship between miscue retelling scores and still other indicators of comprehension, and the consequent application of this knowledge to reading comprehension theory.

The nucleus of this study addresses the problem: How, and in what manner, are retelling subscores as used in the miscue analysis format related to other valid indicators of reading comprehension obtained from the same reading? The study compares retelling subscores to comprehension process (miscue) scores (Sadoski, 1980), post oral-reading cloze test scores, and scores from an especially constructed passage-dependent multiple-choice questions test. These selected comprehension measures represent distinct viewpoints in reading measurement and include both oral and silent measures, both process and product measures, and employ response modes which allow for both convergence and divergence (see chart, Appendix I). Comparison of these measures addresses several warranted purposes for investigation.

Purposes of the Study

Three primary purposes are addressed in this study: 1) To investigate the retelling scoring format for stories that is used as part of the miscue analysis procedures, 2) To pursue a corroborative framework of reading comprehension indicators derived from the same reading of a whole text, as suggested by Page and Vacca (1979), and 3) To explore from varying viewpoints the reading comprehension of a group of elementary school children reading an entire story. These purposes allow for a range of investigation in the data from empirical validation to theoretical inference.

Theoretical Framework

The theoretical foundation of this study is the contention that reading is the reconstruction of the meaning of an author's message in the mind of a reader (K. Goodman, 1969). This reconstruction can theoretically be divided into two phases: 1) the process of reconstructing meaning while reading and 2) the product of the partially or totally reconstructed meaning as stateable knowledge in the mind of the reader (K. Goodman and Burke, 1973). These two phases are interrelated parts of the same mental activity: an effective process of reading comprehension is related to a comprehensible product through the reader's construction of the semantic represent-

ation of the text at various levels of processing (Craik and Lockhart, 1972). Theoretically, then, measurements of an effective reading process should be reflected in the measurement of the product when the reader's goal is the reconstruction of the author's ideas. This study investigates the validity of instruments designed to measure reading comprehension on this basis, and attempts to demonstrate an empirical approach to the reinterpretation of some aspects of the miscue analysis procedures. The data additionally allow for theoretical inferences regarding the nature of reading comprehension.

Definition of Key Terms

1. Reading Comprehension - Reading comprehension is defined in this study as the reconstruction of an author's message in the mind of a reader. The process of comprehending occurs as the reader mentally interacts with a printed text. The product of comprehension is the stateable knowledge about the text present in the reader's mind (K. Goodman, 1969).

2. Retelling - A retelling is an indicator of reading comprehension obtained by a student verbally recalling a selection that he or she has read. In this study, this involves having the reader retell as much as can be remembered of the text and then asking the reader nondirective questions, which do not include any new text information, in order to elicit as much further information related to the text as possible. Retellings are rated by comparing the students' tape recorded recalls to an outline of the original text that is comprised of five subcategories that reflect the traditional literary analysis of stories:

Character analysis-recall - a listing of the characters involved in the story (15 points).

Character analysis-development - information concerning the characters' physical appearance, attitudes and feelings, behavior, and relationship to other characters (15 points).

Events - the actual happenings as they occur in the story (30 points).

Plot - the plan upon which the sequence of events is organized. The overall question or problem which is the central concern of the story (20 points).

Theme - the generalization, perspective, viewpoint, or truism around which the story and its plot are build (20 points).

The point weightings indicate the total points allotted for a complete recall of that information. A perfect retelling score sums to 100 (Y. Goodman and Burke, 1972).

3. Miscue Analysis - Miscue analysis is a two-part reading evaluation technique. The first part of a miscue analysis examines an oral reader's miscues, or deviations from the expected response to the text. The second part of a miscue analysis examines the reader's oral retelling of a selection just read. The format for scoring a retelling in miscue analysis is being examined in this study (Y. Goodman and Burke, 1972).

4. Comprehension Process Score - The comprehension process score is an in-process indicator of reading comprehension derived from an analysis of the semantic acceptability and correction behavior exhibited on the first 25 miscues in an oral

reading. The score is a ratio of the number of miscues which are indicative of a high level of comprehension to the number of miscues which are indicative of both high and low levels of comprehension (Sadoski, 1980). (See Appendix II).

5. Post Oral-Reading Cloze Test - The post oral-reading cloze test uses a portion of a text that has been read orally as a cloze passage. This cloze passage has a 15-space blank substituted for every fifth word until 50 blanks have been produced. Readers are required to fill in the blank with an appropriate word. These tests are constructed, administered, and scored exactly as conventional cloze tests (Bormuth, 1975) except that the reader has had prior contact with the material through one oral reading (Page, 1975). The post oral-reading cloze test used in this study is derived from the first 250 words of the story used in the study.

6. Passage-Dependent Multiple-Choice Questions Test - This type of test is composed of multiple-choice questions which have been determined to be passage-dependent. Often multiple-choice questions can be answered correctly due to semantic and syntactic clues provided in the wording of the questions. Passage-dependent questions are pretested to determine that they can be correctly answered by proficient readers, and that they cannot be answered correctly beyond chance probability without reading the material, thus reducing the possibility of inflated scores due to passage-independence (Hanna and Oaster, 1979). (See Appendix III).

Research Questions, Hypotheses, and Methodology

The methodology of this study is divided into several phases, reflecting the purposes of the study. The first phase of the methodology identifies six research hypotheses, one related to each of the five retelling subscores of the miscue retelling format, and one related to the retelling total score. For each of the first five hypotheses the respective retelling subscores are cast as dependent variables and the selected comprehension measures, including comprehension process (miscue) scores, post oral-reading cloze scores, and passage-dependent multiple-choice test scores, are cast as independent variables. Standardized multiple regression equations are designed for each of these five hypotheses (see Table A, 1-5). Data analysis permits the attribution of specific amounts of variance for each retelling subscore to each of the selected comprehension scores in stepwise fashion to determine the extent and manner of relationships. For hypothesis six, the independent and dependent variable categories are reversed. The resulting standardized regression equation for this question determines the extent and manner in which the retelling subscores are related to the selected comprehension measures appropriately weighted together, in order to reveal the optimal scoring weights for the retelling subscores (see Table A, 6).

TABLE A

Standardized Regression Equations of Six Research Questions

Key:
- Rcar = Retelling: character analysis - recall
- Rcad = Retelling: character analysis - development
- Revents = Retelling: events
- Rplot = Retelling: plot
- Rtheme = Retelling: theme
- CPS = Comprehension process score
- PORC = Post oral-reading cloze score
- PDMC = Passage-dependent multiple-choice test score

Research Question	Standardized Regression Equation
1.	$Rcar = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC)$
2.	$Rcad = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC)$
3.	$Revents = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC)$
4.	$Rplot = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC)$
5.	$Rtheme = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC)$
6.	Summed weighted totals* of CPS, PORC, PDMC = $\beta_1 (Rcar) + \beta_2 (Rcad) + \beta_3 (Revents) + \beta_4 (Rplot) + \beta_5 (Rtheme)$

*The weighting of these totals is accomplished through the following equation:

$$\text{Retelling total scores} = \beta_1 (CPS) + \beta_2 (PORC) + \beta_3 (PDMC).$$

The β weights from this equation become the weighting factors for the totals of CPS, PORC, and PDMC for question 6.

The specific hypotheses are as follows:

1. If significant relationships are found among character analysis-recall retelling subscores and scores on the selected comprehension measures (comprehension process scores, post oral-reading cloze tests, passage-dependent multiple-choice questions tests) then character analysis-recall can be considered a valid subscoring strategy.

2. If significant relationships are found among character analysis-development retelling subscores and scores on the selected comprehension measures, then character analysis-development can be considered a valid subscoring strategy.

3. If significant relationships are found among events retelling subscores and scores on the selected comprehension measures, then events can be considered a valid subscoring strategy.

4. If significant relationships are found among plot retelling subscores and scores on the selected comprehension measures, then plot can be considered a valid subscoring strategy.

5. If significant relationships are found among theme retelling subscores and scores on the selected comprehension measures, then theme can be considered a valid subscoring strategy.

6. If substantive differences are found in the extent and manner of the covariation of the retelling subscores with the selected comprehension measures, then an appropriate weighting can be suggested for each subscore to yield the strongest composite total score. This can be accomplished statistically, and will represent a new weighting system which may yield more valid and accurate results than the present arbitrarily determined retelling weights.

The second phase of the methodology of this study seeks to define a corroborative framework of validity in the selected comprehension measures derived from the reading of a whole text. The selected measures are divided into process and product categories. As operationally defined here, process measures reflect readers' responses during reading and product measures reflect readers' responses following the reading. Within the theoretical framework of this study, concurrent and predictive validity are appraised by investigating correlations between the process and product measures. In this study, comprehension process scores and post oral-reading cloze scores are defined as process measures; retelling scores and passage-dependent multiple-choice test scores are defined as product measures.

The third phase of the methodology of this study explores the reading comprehension of a group of children reading an entire story as measured from an array of

perspectives in comprehension assessment. The measurement variables selected for this study allow for indications of comprehension as the reading process occurs, and indications of the product of that process after the reading is completed. Within the theoretical framework of this study, process and product comprehension are related but not identical constructs. Differences in the nature and extent of relationships between the variables are explored using correlation and factor analysis techniques, and subjected to theoretical scrutiny and interpretation.

Data collection for this study is performed through selecting 48 fifth-grade students and assigning each to one of three groups. Group assignment is based on a model of deliberate sampling for heterogeneity (Cook and Campbell, 1979). In school, each student is tape recorded reading a standard fifth grade basal reader story ("Freddie Miller, Sientist", Betts and Welch, 1965) and then administered the selected comprehension tasks in a fixed order. The order of the tasks is counterbalanced for the three groups to deliberately confound the effects of having any one task prior to another (Campbell and Stanley, 1963). Group composition and counterbalanced task order are given in Table B. From each tape recorded reading, a comprehension process score is derived, in accordance with validated procedures described in Sadoski (1980) and Sadoski, Page, and Carey (1981). The post oral-reading cloze passage is taken from the text read orally in accordance with procedures validated by Page (1975). The passage-dependent multiple-choice test used this study is especially constructed in accordance with guidelines established by Hanna and Oaster (1978-79). Validity and reliability for this test are established prior to its conventional administration in this study. Retelling data are gathered and scored in accordance with guidelines established in the Reading Miscue Inventory (Y. Goodman and Burke, 1972) and in Goodman and Goodman (1978).

Data Analysis, Findings and Interpretation

The methodology for the first purpose of the study involves six separate multiple

TABLE B

Group Composition and Task Order for Groups 1, 2, 3

	Group Composition			Task Order			
Task Order Group	N	Reading Ability Instructional Group* high ave. low	Sex M - F	Oral ** Reading	Retelling	Post-Oral Reading Cloze Test	Passage-Dependent Multiple-Choice Questions Test
1	16	6 - 5 - 5	8 - 8	1	2	3	4
2	16	5 - 6 - 5	8 - 8	1	3	4	2
3	16	5 - 5 - 6	8 - 8	1	4	2	3

* group equivalency established through analysis of variance on dependent variables

**generating a comprehension process score from miscues

regression solutions for the five retelling subscores and the retelling total score, respectively. Analysis indicates that four of the five retelling subscores produce significant multiple R's with the selected comprehension measures. The fifth subscore, character analysis-recall, demonstrates borderline significance and is retained for further analysis for both statistical and educational reasons. Because each of the five retelling subscores achieves significance as a subscoring strategy, the sixth regression equation addressing the retelling total score is undertaken. The results of this solution yield standardized coefficients which represent a modified and empirically validated format of numerical weights:

Subscore	Present weight	Change	Modified Weight
Character analysis - recall	15 pts.	-12	3 pts.
Character analysis - development	15 pts.	+12	27 pts.
Events	30 pts.	-3	27 pts.
Plot	20 pts.	+3	23 pts.
Theme	20 pts.	0	20 pts.
Total	100 pts.		100 pts.

The methodology for the second purpose of the study involves establishing a corroborative framework of comprehension indicators around the reading of an entire story. Such a corroborative framework involves establishing concurrent validity between process indicators taken while the reading is in progress, establishing concurrent validity between product indicators taken immediately after the reading of the story, and establishing predictive validity between the process and product measures. Data analysis using correlation establishes such a framework, yielding a degree of construct validity for the measures as employed in this study:

Variables	Relationship	r	p<
Comprehension process score/ Post oral-reading cloze	Process/Process	.547	.005
Retelling total/ Passage-dependent multiple-choice	Product/Product	.275	.029

Comprehension process score/ Retelling total	Process/Product	.620	.001
Comprehension process score/ Passage-dependent multiple-choice	Process/Product	.369	.005
Post oral-reading cloze/ Retelling total	Process/Product	.511	.001
Post oral-reading cloze/ Passage-dependent multiple-choice	Process/Product	.483	.001

The methodology for the third purpose of the study involves exploring the reading comprehension of a story from several perspectives in comprehension theory simultaneously. The retelling subscores are utilized here as a theoretical vehicle for interpretation. The simple recall of character names, which is measured by character analysis-recall, is viewed as a literal comprehension task calling for only superficial comprehension. The recall of character traits and changes, measured by character analysis-development, is seen as involving more inference and a deeper level of comprehension, relative to the explicity of the text. The recall of events subscore is seen as measuring a moderate level of comprehension, in that recalling events involves simple recall, but also entails the perception of cause-effect-consequence relationships among the events. Statements which indicate a grasp of the plot and theme of a story, as measured by the plot and theme retelling subscores, are theoretically indicative of the deepest levels of comprehension, in that these tasks require the analysis and synthesis of both explicit and implicit story information at abstract conceptual levels.

Using the retelling subscores as a vehicle, patterns become apparent in correlations between the measures in that scores on some measures tend to correlate more highly with some retelling subscores than with others. However, many of these correlations are not statistically significant and therefore could be accounted for by chance alone. To confirm the existence of patterns in the data and render them interpretable, a factor analysis is performed. Because this factor analysis seeks to define separate patterns among related measures, a principal components analysis is

selected. An orthogonal factor rotation is employed in order to maximize the contribution of each variable to a single factor (Kim, 1975). The goal of these procedures is to approach a simple structure solution as summarized by Child (1969). This analysis produces three factors which are theoretically interpretable from a levels-of-processing perspective, as suggested by Craik and Lockhart (1972):

Factor I

Variable	Loading ($p<.01$)
Comprehension Process Score	.764
Post oral-reading cloze	.654
Retelling: character analysis-development	.734
Retelling: plot	.709
Retelling: theme	.554

Factor II

Variable	Loading ($p<.01$)
Post oral-reading cloze	.502
Passage-dependent multiple-choice	.848
Retelling: events	.815

Factor III

Variable	Loading ($p<.01$)
Retelling: character analysis-recall	.839
Retelling: theme	-.586

Factor I can be interpreted as a deep-processing factor. The deep-processing retelling subscores plot and theme load on this factor, along with the comprehension process score. This score is derived largely from the existence of semantically acceptable miscues in oral readings. These miscues are evidence that readers are operating at a level more conceptually abstracted than merely producing an accurate oral rendition of the text. The post oral-reading cloze score also loads on Factor I, and on Factor II as well. This might be interpreted to indicate that cloze is not inherently a deep processing task (Gould, 1979) but can become a deep processing activity when it involves additional processing of the text as it does in a post oral-reading situation (Craik and Lockhart, 1972).

Factor II can be interpreted as a middle-level processing factor. Its high loadings on events retelling scores and cloze performance scores are consistent with the foregoing theoretical positions regarding these tasks. The moderate level of processing associated with this factor tends to be confirmed by the loading here of the passage-dependent multiple-choice test. Entine and Klare (1980) find a negative correlation between passage-dependence and readability. If it can be broadly assumed that texts with higher readability have heavier concept loads and call for deeper processing, then a moderate or superficial processing indicator should demonstrate such negative correlations with readability. The loading of passage-dependent multiple-choice test scores with other middle-level processing indicators is consistent with this finding.

Factor III is a bipolar factor which can be interpreted as a continuum between its poles. The high positive loading on the superficial comprehension variable character analysis-recall is mirrored by the substantial negative loading on theme, a deep processing variable. Factor III can be seen as an "either-or" factor which indicates that processing levels may be somewhat exclusive: readers do not process deeply and superficially at the same time -- to do so would be to overload attentional apparatus in a way analagous to proofreading for grammatical or spelling errors and reading for understanding at the same time. In light of Factor III it is theoretically more defensible to assume that readers shift between levels of processing as intention, context, schema, and text structure, among other factors, dictate. The notion that reading comprehension exists in levels and that we process flexibly through these levels is consistent with much theory in reading (cf. Gray, 1960; Robinson, 1966; Herber, 1970; Barrett, 1976; Gibson and Levin, 1975; Ruddell and Bacon, 1972).

Additional analysis of the data yields further theoretical insights. For example, a high correlation is found between plot retelling subscores and retelling total scores ($r = .808$ $p<.001$). This is the highest correlation of any retelling

subscore with the total retelling score, and the highest correlation in the study. This may tend to support the contention that skilled readers use story structure extrapolated during deep processing as a framework for organizing comprehension, as a memory retrieval system, and perhaps as the basis for the elaboration of further deep structure components such as theme and character analysis (Anderson, 1977; Mandler and Johnson, 1977; Stein, 1979, Meyer, Brandt and Bluth, 1980). Mixed correlations found between the variables that load on Factor I, the theoretical deep processing factor, tend to confirm that deep processing is not unitary, but has differing aspects. These differing aspects may have an organizational relationship in the reader's mind. An awareness of plot development may serve as an organizing framework to which story details are added through information selected from the text at the various processing levels. The ongoing development of plot and detail may then serve as a base from which to elaborate predictions and form inferences about character development and theme. These predictions and inferences may further elaborate the awareness of plot and detail, in an ongoing feedback loop. Such an explanation is compatible with schema theory (Bartlett, 1932; Anderson, Reynolds, Schallert, and Goetz, 1977), with theories of macrostructure (van Dijk, 1977), with theories of elaboration (Reder, 1980) and with findings on the use of story grammars by elementary school children (Stein and Glenn, 1979; Mandler and Johnson, 1977; Dreher and Singer, 1980). This explanation would also be consistent with the notion that miscuing is the overt manifestation of ongoing deep structure activity (K. Goodman, 1969). High comprehension process scores may indicate that the reader is in touch with meaning, but that the reader's attention is being mainly directed to deep structure integration.

The theoretical explanation forwarded for the results of this study points toward an explanation of story comprehension as a multi-leveled, attentional activity that appears different from different perspectives and when measured by different instruments. Such a definition seems most compatible with interactive models of reading.

Summary of Main Conclusions and Implications

1. A modified and empirically validated system of subscore weights for miscue analysis format retellings of stories is suggested. Replication and further research with other stories and student groups is called for.

2. A feasible approach to the clarification of the concurrent validity of the 2 parts of the miscue analysis procedures is demonstrated. Replication and further research is called for.

3. Support for miscue theory is concluded.

4. Additional validity for the comprehension process score (Sadoski, 1980) is demonstrated.

5. Additional validity for the post oral-reading cloze test (Page, 1975) is demonstrated.

6. The validity of passage-dependent multiple-choice questions (Hanna and Oaster, 1978-79) is demonstrated, with limitations.

7. An incremental contribution to the development of a corroborative framework of reading comprehension indicators (Page and Vacca, 1979) is made, and an additional dimension (processing depth) is suggested for such a framework.

8. Support for theories of levels of processing in the reading of stories is concluded.

9. Support for the notion that processing stories is attentional, flexible, and elaborative is suggested.

10. Support for interactive theories of reading comprehension is suggested.

APPENDICES

Appendix I

Characteristics of Reading Comprehension Indicators

Comprehension Indicators	Process	Product	Oral	Silent	Convergent	Divergent
Retelling		X	X		X	X
Comprehension Process Score	X		X		X	X
Post Oral-Reading Cloze	X			X	X	
Passage-Dependent Multiple-Choice Questions		X		X	X	

Appendix II

Comprehension Process Score
Scoring Instrument

Supercues (total % of 004,001,009) =

Pseudocues (total % of 020) =

Entropicues (total % of remaining) =

100% - ____(%entropicues) = ____residual

_____ (% of supercues) / (residual) x 100 = CP score

Subject:_____

Story:_____

CORRECTION BEHAVIOR

SEMANTIC ACCEPTABILITY

	successful	partially successful	not successful	no attempt
passage	001	002	003	004
sentence	005	006	007	008
prior context	009	010	011	012
after context	013	014	015	016
not acceptable	017	018	019	020

APPENDIX III

Passage-Dependent Multiple-Choice Questions Test

Mean test context independence index = -.04
Mean test context dependence index = .55

( ) = correct response

1. Mrs. Miller discovered one of Freddie's experiments when: a. she started the vacuum cleaner; (b.) she opened the refrigerator; c. she looked in the washing machine; d. she opened the oven to cook supper.

2. The nickname "Tinker" was given to Freddie by: a. Elizabeth; b. Uncle Charles; c. Mrs. Miller; (d.) Mr. Miller.

3. Freddie's secret alarm clock experiment was almost given away by: a. something Elizabeth said at breakfast; b. the noise his mother heard from the cellar; c. something he left on the table; (d.) something he said at supper.

4. We know that Mrs. Miller had: (a.) four brothers in Switzerland; b. two brothers in England; c. two brothers in Switzerland; d. three brothers in England.

5. The experiment that worked best of all was: a. a chemistry experiment; (b.) a flashlight experiment; c. an alarm clock experiment; d. an electric bell experiment.

6. Because of the alarm clock experiment: a. Freddie became a hero; b. Freddie's allowance was cut; (c.) Freddie had a dream; d. Freddie got a nickname.

7. Because of the flashlight experiment: (a.) Freddie became a hero; b. Freddie's allowance was cut; c. Freddie had a dream; d. Freddie got a nickname.

8. Freddie helped Elizabeth by: a. giving her an emergency signal; b. fixing an alarm clock; c. giving his uncle an emergency signal; (d.) building a flashlight.

9. By the end of the story Mrs. Miller decided that Freddie: (a.) was just like his father; b. was not a very good scientist; c. was just like his Uncle Charles; d. should get an increase in his allowance.

REFERENCES

Anderson, R. Schema-directed processes in language comprehension. Technical report No. 50. Champaign, Ill.: University of Illinois Center for the Study of Reading July 1977.

Anderson, R., Reynolds, R., Schallert, D., and Goetz, E. Frameworks for comprehending discourse. American Educational Research Journal, 1977, 14, 367-381.

Barrett, T. Taxonomy of reading comprehension. in R. Smith and T. Barrett Teaching reading in the middle grades. Addison-Wesley, 1976.

Bartlett, F. Remembering. Cambridge, Mass.: The University Press, 1932.

Betts, E. and Welch, C. Adventures here and there. Betts Basic Readers (3rd ed.) American Book Co., 1965, pp. 61-68.

Bormuth, J. Literacy in the classroom. In W. D. Page (Ed.) Help for the reading teacher: New directions in research. Urbana, Ill.: ERIC/CRCS, National Council of Teachers of English, 1975, pp. 60-90.

Campbell, D. and Stanley, J. Experimental and quasi-experimental designs for research. Rand-McNally, 1963.

Child, D. The essentials of factor analysis. Holt, Rinehart and Winston, 1969.

Cook, T., and Campbell, D. Quasi-experimentation: Design and analysis issues for field settings. Rand-McNally, 1979.

Craik, F. and Lockhart, R. Levels of processing: A framework for memory research. Journal of Verbal Learning and Verbal Behavior, 1972, 11, 671-684.

Dreher, M. and Singer, H. Story grammar instruction unnecessary for intermediate grade students. Reading Teacher, 1980, 34, 261-268.

Entin, E. and Klare, G. Components of answers to multiple-choice questions on a published reading comprehension test: An application of the Hanna-Oaster approach. Reading Research Quarterly, 1980, 15, 228-236.

Gibson, E. and Levin, H. The psychology of reading. M.I.T. Press, 1975.

Goodman, K. and Goodman, Y. Reading of American children whose language is a stable rural dialect of English or a language other than English. National Institute of Education Project No. NIE-C-00-3-0087. Washington, D.C.: U.S. Dept. of Health, Education and Welfare, August, 1978.

Goodman, K. Analysis of Oral reading miscues: Applied psycholinguistics. Reading Research Quarterly, 1969, 5, 9-30.

Goodman, K. and Burke, C. Theoretically based studies of patterns in miscues in oral reading performance. USOE Project No. OEG-0-0-320375-4269. Washington, D.C.: U.S. Department of Health, Education and Welfare, March 1973.

Goodman, Y. and Burke, C. Reading miscue inventory manual: Procedure for diagnosis and evaluation. McMillan, 1972.

Gould, S. Cloze restoration, recall, and discourse processing in middle grade readers. In J. Harste and R. Carey (Eds.) New perspectives on comprehension. Monograph in language and reading studies. US ISSN 0193-4759, No. 3, School of Education, Indiana University, Bloomington, 1979, pp.64-76.

Gray, W. The major aspects of reading. In H. Robinson (Ed.) Sequential development of reading abilities. Supplementary educational monographs 90. University of Chicago Press. 1960.

Hanna, G. and Oaster, T. Toward a unified theory of context dependence. Reading Research Quarterly, 1978-79, 14, 226-243.

Herber, H. Teaching reading in the content areas. Prentice-Hall, 1970.

Kim, J. Factor analysis, In Nie, et. al. Statistical package for the social sciences. McGraw-Hill, 1975, pp. 468-514.

Mandler, J. and Johnson, N. Remembrance of things parsed: Story structure and recall. Cognitive Psychology, 1977, 9, 111-151.

Meyer, B., Brandt, D. and Bluth, G. Use of top-level structure in text: Key for reading comprehension in ninth-grade students. Reading Research Quarterly, 1980, 16, 73-103.

Page, W. The post oral-reading cloze test: New link between oral reading and comprehension. Journal of Reading Behavior, 1975, 7, 383-389.

Page, W. and Vacca, R. Overt indications of reading comprehension: Product and process considerations. In J. Harste and R. Carey (Eds.) New perspectives on comprehension. Monograph in language and reading studies. US ISSN 0193-4759, No. 3, School of Education, Indiana University, Bloomington, 1979, pp. 49-63.

Reder, L. The role of elaboration in the comprehension and retention of prose: A critical review. Review of Educational Research. 1980, 50, 5-53.

Robinson, H. The major aspects of reading. In H. Robinson (Ed.) Reading: Seventy-five years of progress. University of Chicago Press, 1966.

Ruddell, R. and Bacon, H. The nature of reading: Language and meaning. In R. Hodges and E. Rudorf (Eds.) Language and learning to read: What teachers should know about language. Houghton Mifflin, 1972.

Sadoski, M. A unitive psycholinguistic comprehension measure: The comprehension process score. In W. Page and J. Meagher (Eds.) Language centered reading instruction. Storrs, Conn.: University of Connecticut Reading-Language Arts Center, 1980, pp. 86-90.

Sadoski, M., Page, W., and Carey, R. The comprehension process score: Empirical testing of a new miscue scoring technique. New England Reading Association Journal, 1981, in press.

Stein, N. How children understand stories: A developmental analysis. In L. Katz (Ed.) Current topics in early childhood education, Vol. 2, Ablex, 1979.

Stein, N. and Glenn, C. An analysis of comprehension in elementary school children. In R. Freedle (Ed.) New directions in discourse processing, vol. 2, Ablex, 1979.

van Dijk, T. Semantic macro-structures and knowledge frames in discourse comprehension. In M. Just and P. Carpenter (Eds.) Cognitive processes in comprehension. Laurence Erlbaum Associates, 1977, pp. 3-32.